

WE CLAIM:

1. A graphical user interface system for displaying a plurality of icons, said system further comprising:

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means for depicting a desktop which conceptually provides a three-dimensional surface for said icons, in which said three dimensional surface is represented on a two-dimensional display device, and

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means for supporting navigation of said desktop by simulating a rotation of the desktop in three-dimensional space.

2. A graphical user interface system as claimed in claim 1, in which the desktop is viewed at an apparent distance from a user viewpoint and said means for depicting includes:

means for calculating a viewing distance for each of said plurality of icons based on the apparent distance and the location of the icon on the three-dimensional surface, and

means for scaling each of said plurality of icons by said relevant viewing distance.

5 3. A graphical user interface system as claimed in claim 2, further comprising:

means for changing the apparent distance between the viewpoint and the desktop.

10 4. A graphical user interface system as claimed in claim 1, further comprising:

15 an array for storing the position of each of said plurality of icons, in which the position is stored as a two-dimensional co-ordinate relative to the display device.

5 5. A graphical user interface system as claimed in claim 4, in which the means for supporting navigation comprises:

20 means for determining a new two-dimensional co-ordinate for each of said plurality of icons following rotation of the desktop, and

means for updating the array accordingly.

6. A graphical user interface system as claimed in claim 5, in which said means for determining further comprises:

means for transforming the two-dimensional co-ordinate of each of said plurality of icons into a three-dimensional co-ordinate;

means for changing the three-dimensional co-ordinates based on the rotation of the desktop, and

means for transforming the changed three-dimensional co-ordinates into a new two-dimensional co-ordinate for each of said plurality of icons.

7. A graphical user interface system as claimed in claim 1, in which an icon is initially added to the centre of the desktop by default.

8. A graphical user interface system as claimed in claim 1, in which said means for supporting navigation is responsive to dragging the desktop with a pointing device in order to rotate the desktop.

9. A graphical user interface system as claimed in claim 1, in which said means for supporting navigation is responsive to dragging an icon beyond the desktop with a pointing device in order to rotate the desktop.

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10 10. A graphical user interface system as claimed in claim 1, in which said plurality of icons are grouped automatically according to pre-determined criteria.

11. A graphical user interface system as claimed in claim 1, in which said three-dimensional surface is spherical.

12. A computer program product for displaying a plurality of icons, said computer program product comprising computer program instructions on a computer readable medium, said instructions causing the computer to perform the steps of:

depicting a desktop which conceptually provides a three-dimensional surface for said icons, in which said three dimensional surface is represented on a two-dimensional display device, and

supporting navigation of said desktop by simulating a rotation of the desktop in three-dimensional space.

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13. A computer program product as claimed in claim 12, in which the desktop is viewed at an apparent distance from a user viewpoint and said step of depicting includes the steps of:

calculating a viewing distance for each of said plurality of icons based on the apparent distance and the location of the icon on the three-dimensional surface, and

10 scaling each of said plurality of icons by said relevant viewing distance.

14. A computer program product as claimed in claim 13, further comprising the step of:

15 changing the apparent distance between the viewpoint and the desktop.

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15. A computer program product as claimed in claim 12, further comprising:

an array in memory for storing the position of each of said plurality of icons, in which the position is stored as

a two-dimensional co-ordinate relative to the display device.

16. A computer program product as claimed in claim 15, in
5 which the step of supporting navigation further comprises
the steps of:

10 determining a new two-dimensional co-ordinate for each
of said plurality of icons following rotation of the
desktop, and

15 updating the array accordingly.

17. A computer program product as claimed in claim 16, in
which the step of determining further comprise the steps
of:

20 transforming the two-dimensional co-ordinate of each
of said plurality of icons into a three-dimensional
co-ordinate;

25 changing the three-dimensional co-ordinates based on
the rotation of the desktop, and

transforming the changed three-dimensional co-ordinates into a new two-dimensional co-ordinate for each of said plurality of icons.

5 18. A computer program product as claimed in claim 12, in which an icon is initially added to the centre of the desktop by default.

10 19. A computer program product as claimed in claim 12, in which said step of supporting navigation is responsive to dragging the desktop with a pointing device in order to rotate the desktop.

15 20. A computer program product as claimed in claim 12, in which said step of supporting navigation is responsive to dragging an icon beyond the desktop with a pointing device in order to rotate the desktop.

20 21. A computer program product as claimed in claim 12, in which said plurality of icons are grouped automatically according to pre-determined criteria.

22. A computer program product as claimed in claim 12, in which said three-dimensional surface is spherical.